Software Division

There's More to Software Process Improvement Than CMMI

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AGENDA

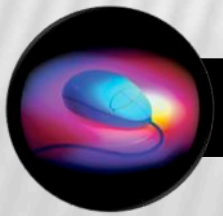
Introduction

CMMI Limitations

Process Management

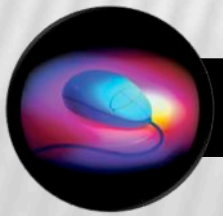
Integrated Toolkit

Summary & Questions



THERE'S MORE TO SPI THAN CMMI

- We are constantly in danger of forgetting the real requirements of our businesses by following “false idols”
  - Understand the limitations of CMMI
- Process Improvement is an admirable goal, but it demands a degree of process maturity to begin with
  - Shift the focus from Process Improvement to Process Management
- CMMI is only part of the puzzle
  - Build and nurture an integrated Process Management toolkit



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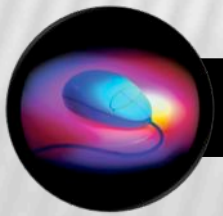
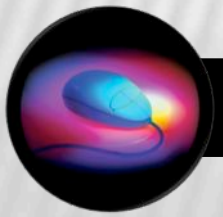


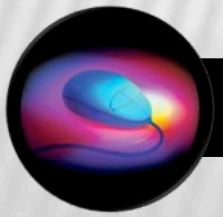
UNDERSTAND THE LIMITATIONS OF CMMI

- CMMI seen as silver bullet
  - Black and white view – good or bad
  - Don't be driven by the badge
- Understand the limitations of CMMI by understanding what it is …
  - Framework of best practice for Software and Systems Engineering and Project Management
- … and what it isn't …
  - A Handbook of How to do things
  - A Process Management lifecycle or method
  - A Change Management lifecycle or method



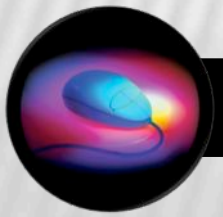
UNDERSTAND THE LIMITATIONS OF CMMI

- CMMI "dichotomy" – CMMI requires a certain level of maturity to start
  - Organisational Process Definition and Organisational Process Focus as level 3 processes
  - Need for Measurement
  - Choosing the Continuous or Staged Representation
- Process Management not Explicit
  - only Process Control and Process Improvement
- CMMI is only part of the solution
  - synergy with other standards and frameworks



THE REAL ISSUE WITH USING CMMI

- Stated objectives misaligned with real business goals
  - CMMI ML stated as objective or goal
  - Management focus is on getting the badge
- Align process management activities to business requirements
  - Time to market
  - Measured Quality Improvements
  - Customer satisfaction improvement



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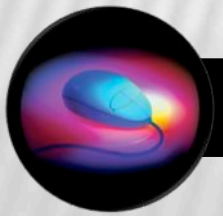
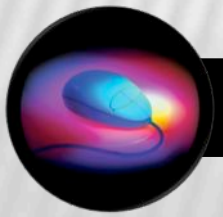
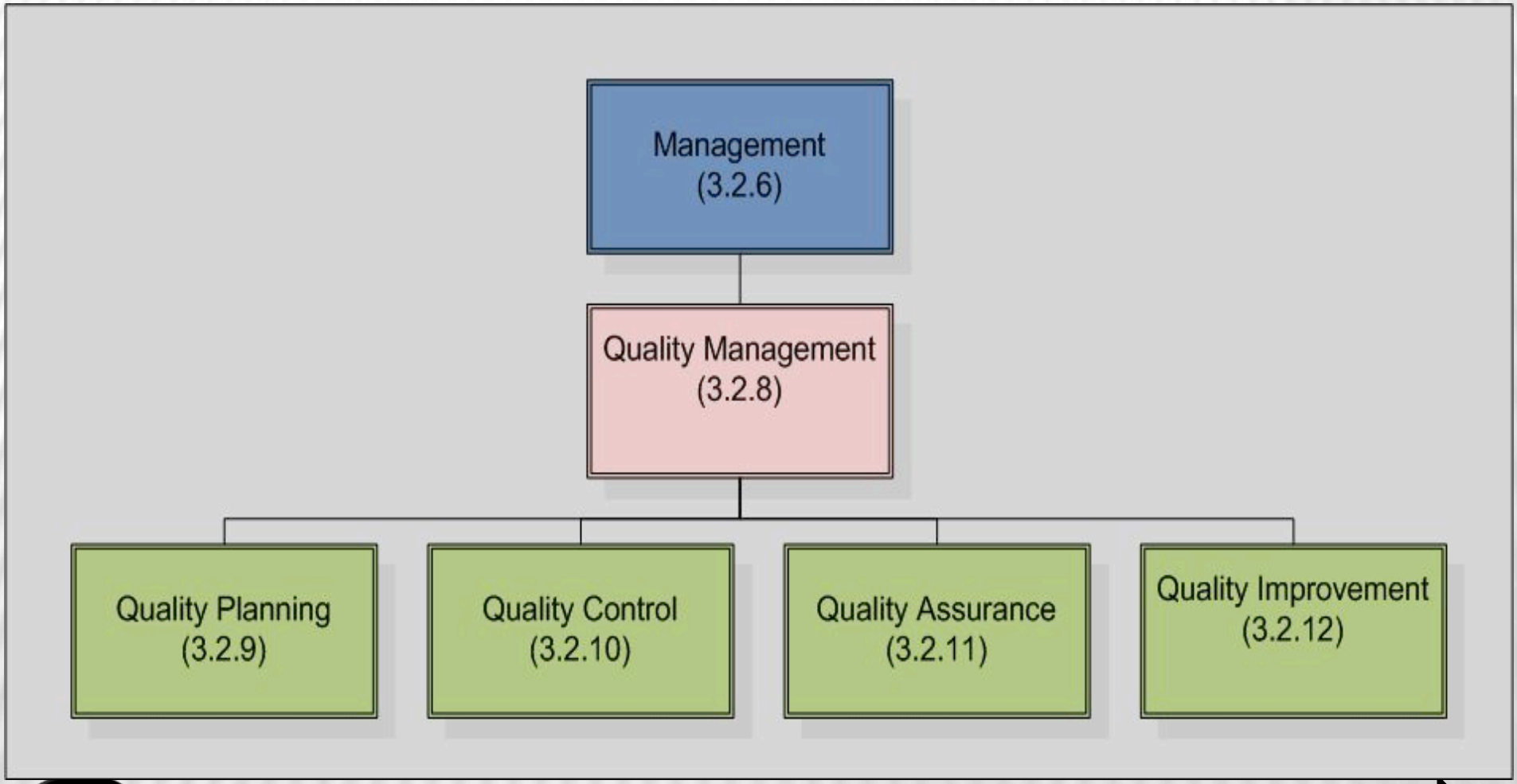


PROCESS MANAGEMENT OR IMPROVEMENT

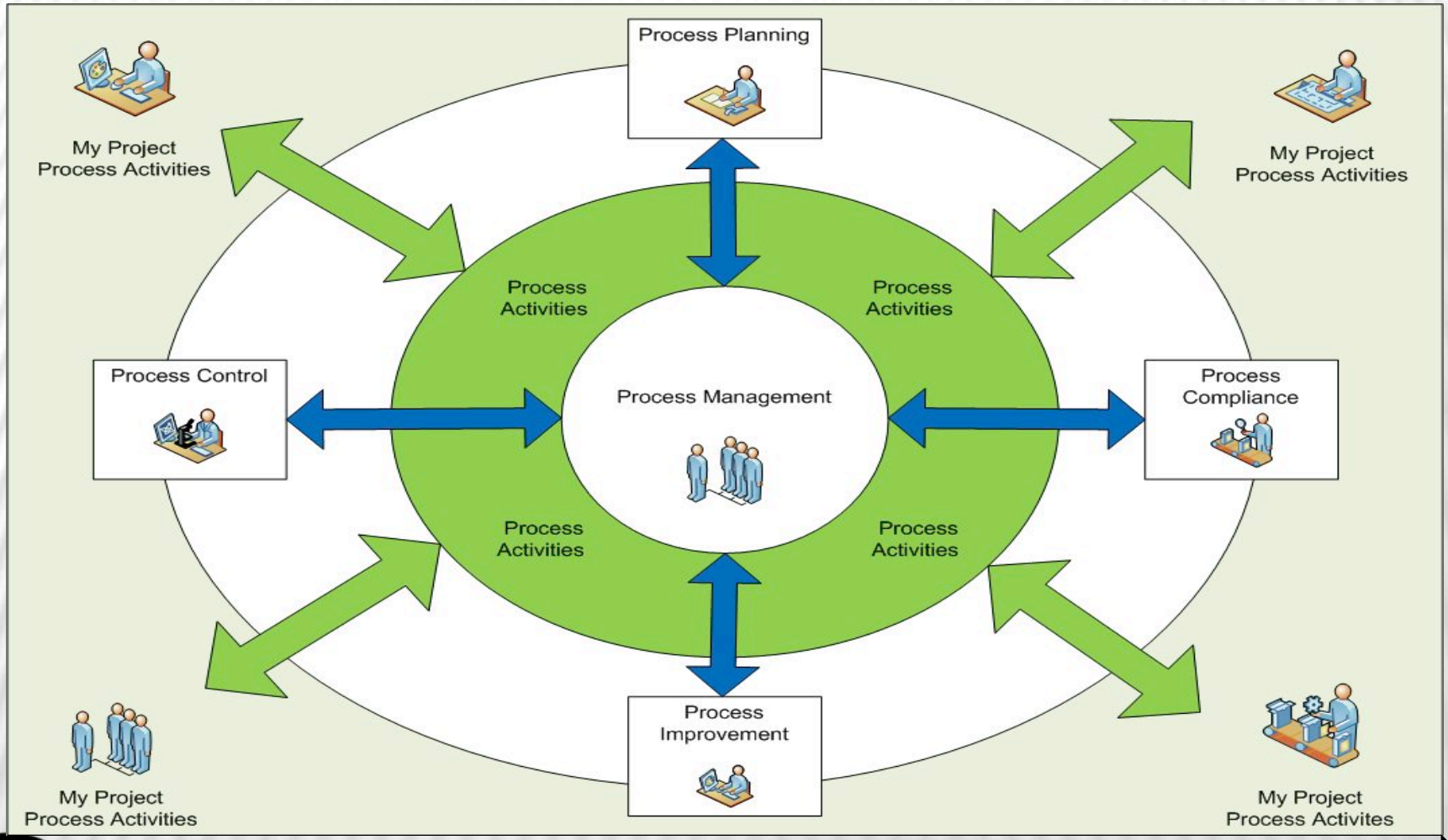
- Process Improvement is only part of the work
- Let's align our terminology with what we do
- Process Management encompasses
  - Process Planning and Control
  - Process Assurance and Compliance
  - Process Improvement
- Management and Decision Making with Data
  - Consistency of decision making
  - Accuracy of decision making
  - Minimising risk of making bad decisions



PROCESS MANAGEMENT – ISO 9000

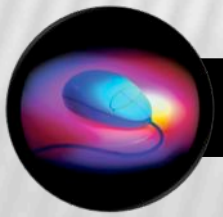


PROCESS MANAGEMENT ROUND TABLE



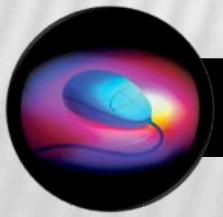
PROCESS MANAGEMENT

- People execute processes
  - Process Awareness and Usage
  - Training, Education and Mentoring
  - Process Culture
  - Sponsorship and stakeholder involvement
- Holistic Approach to Organisational Processes
  - Need to look at other areas not just CMMI focus
  - HR, Training, Finance etc.



PROCESS MANAGEMENT

- Develop a process management culture
  - Roles and Responsibilities
  - Explicit Management Goals and Objectives
  - Process and Quality Synergy
  - Everybody's Responsibility
- Use a risk based approach to process management
  - Where is the pain ?
  - What keeps the Chief Executive awake at night ?
  - What prevents Delivery Managers from Delivering ?



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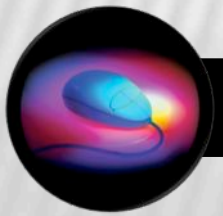
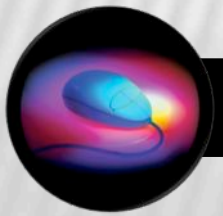


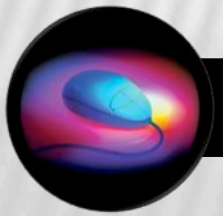
MANAGING PROCESSES

- People create, manage and execute processes so people skills are a pre-requisite
  - Change Management
- SE techniques are not suitable for process management
  - Product and Process Implementation are different
  - Project and Process Management skills are different
- Technical skills cannot solve non-technical issues
  - Find the right people
  - Change Agents and Communicators
  - Process Champions



BUILD A BEST IN BREED TOOLKIT

- Understand the wider quality practices and alternative models
  - ISO standards (ISO 9000, 10005, 10006, etc.)
  - SPICE (ISO 15504), AutoSPICE
  - Six Sigma
  - ITIL v3
  - IEEE Standards
- Look outside IT for process tools and techniques
- Use a pick and mix approach to create an integrated toolkit

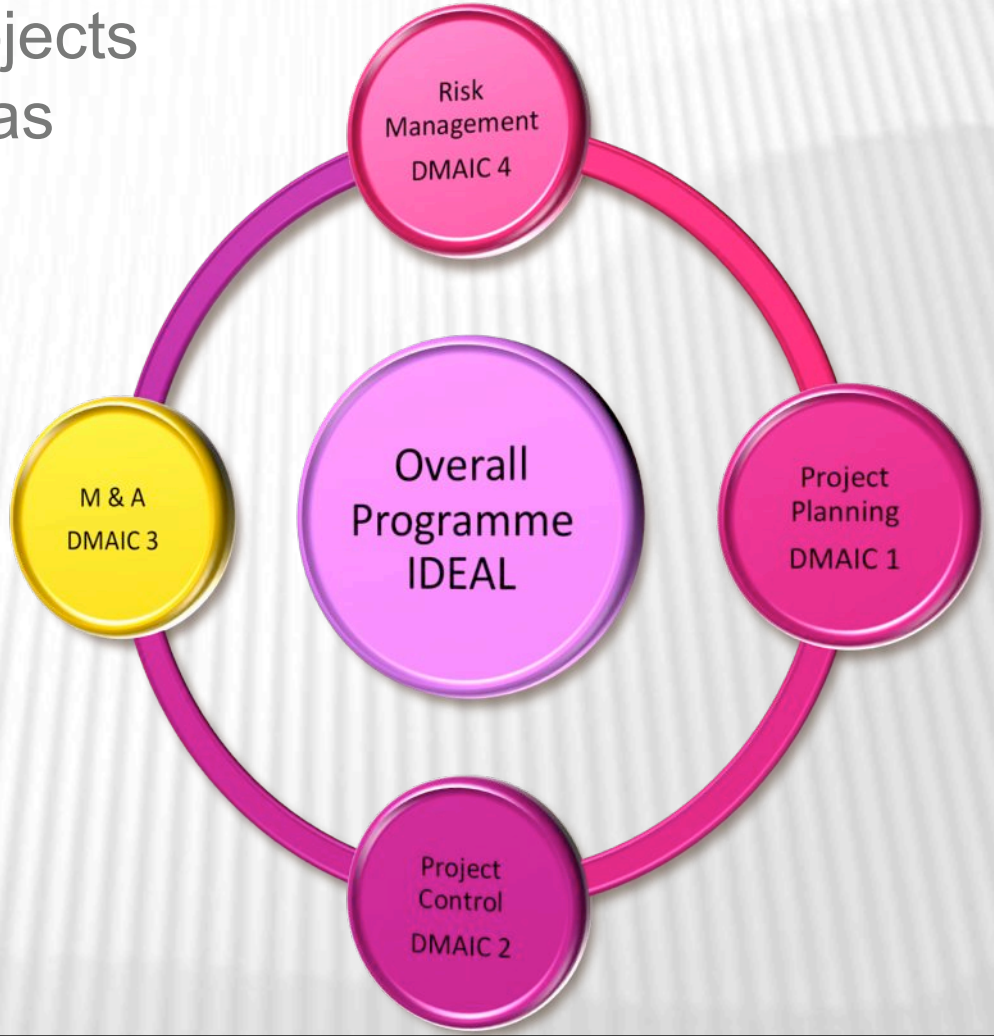


BRINGING IT ALL TOGETHER

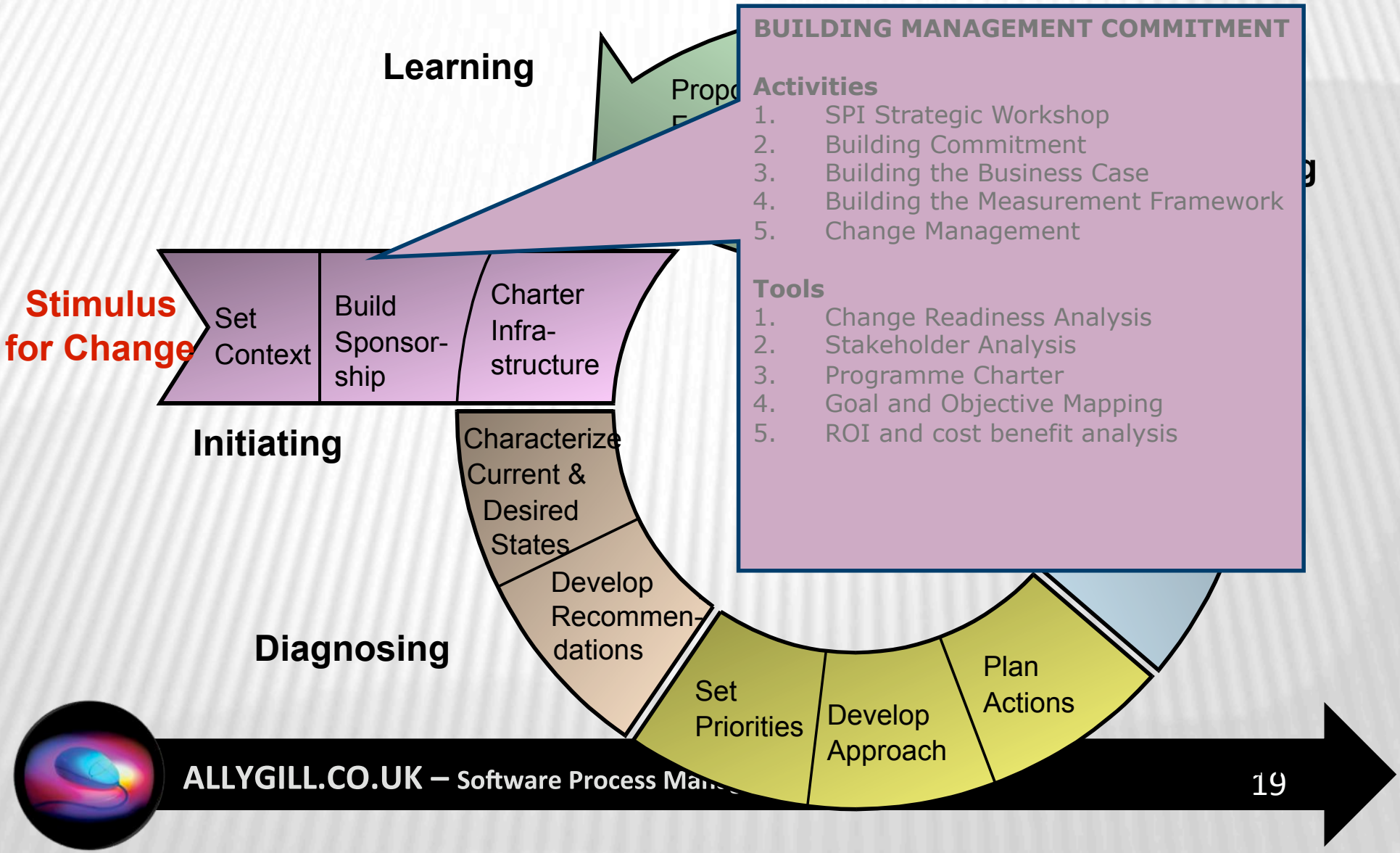
Shewart I	PLAN		DO	CHECK	ACT
Shewart 2	PLAN		EXECUTE	REVIEW	LEARN
	Plan what to do and how to do it		Make it happen	Verify against plan and goals	Understand what happened and learn
IDEAL	INITIALISE	DIAGNOSE	ESTABLISH	ACT	LEARN
	Set Context	Characterise Current and Desired States	Set Priorities	Create Solution(s)	Analyse and Validate
	Build Sponsorship	Develop Recommendation	Develop Approach	Pilot / Test Solutions	Propose Future Actions
	Secure Infrastructure		Plan Actions	Refine Solutions	
DMAIC	DEFINE	MEASURE	ANALYSE	IMPROVE	CONTROL
	Identify Problem	Validate Problem / Process	Develop Causal Hypothesis	Develop ideas to remove root casue	Establish standard measures to maintain performance
	Define Requirements	Refine Problem or Goal	Identify vital root causes	Test Solutions	Correct problems as needed
	Set Goals	Measure Key Steps and Inputs	Validate Hypothesis	Standardise Solutions and measure results	

BRINGING IT ALL TOGETHER – AN EXAMPLE

Use multiple DMAIC projects for specific Process Areas within an overall IDEAL programme



AN EXAMPLE INTEGRATED TOOLKIT



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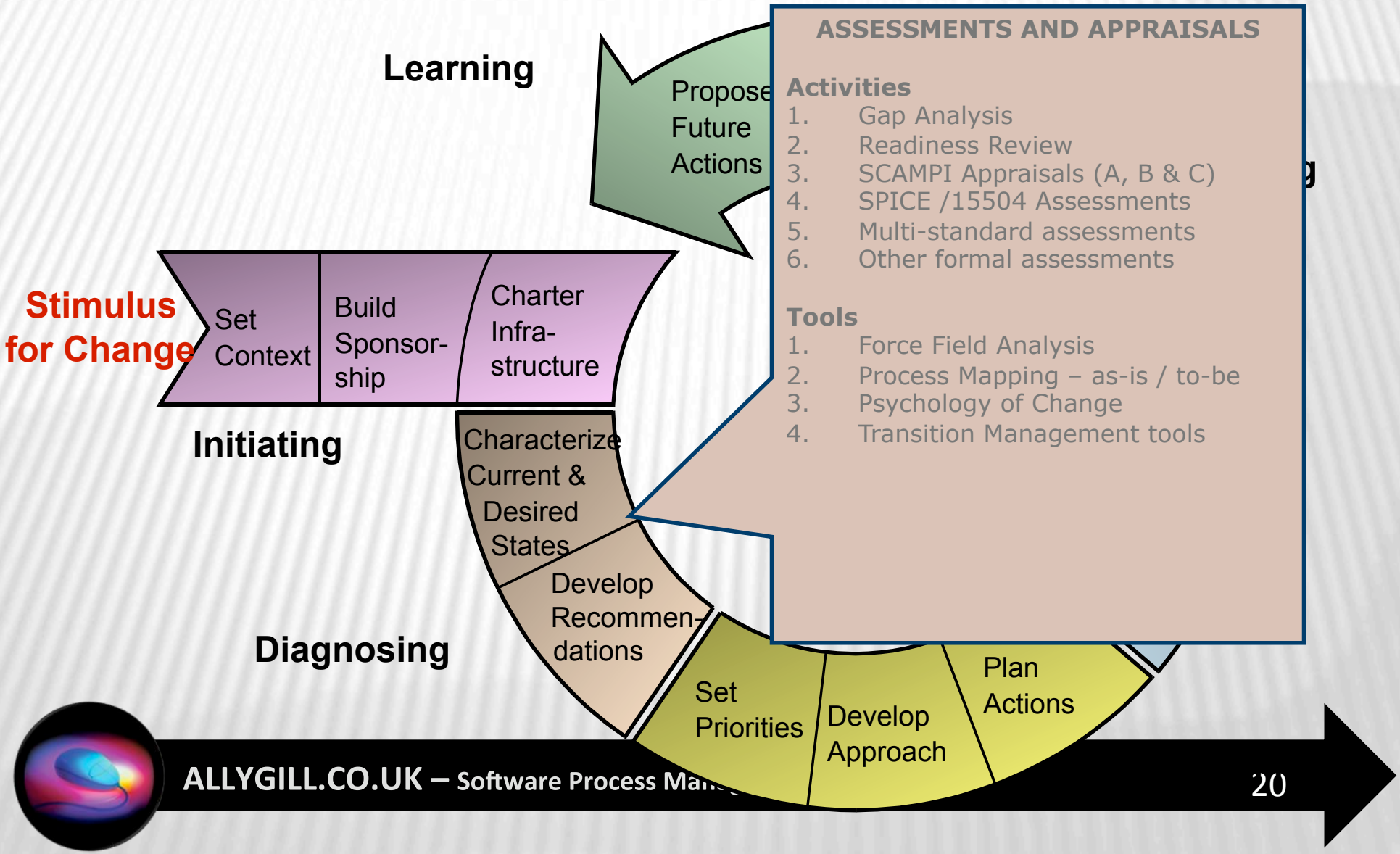

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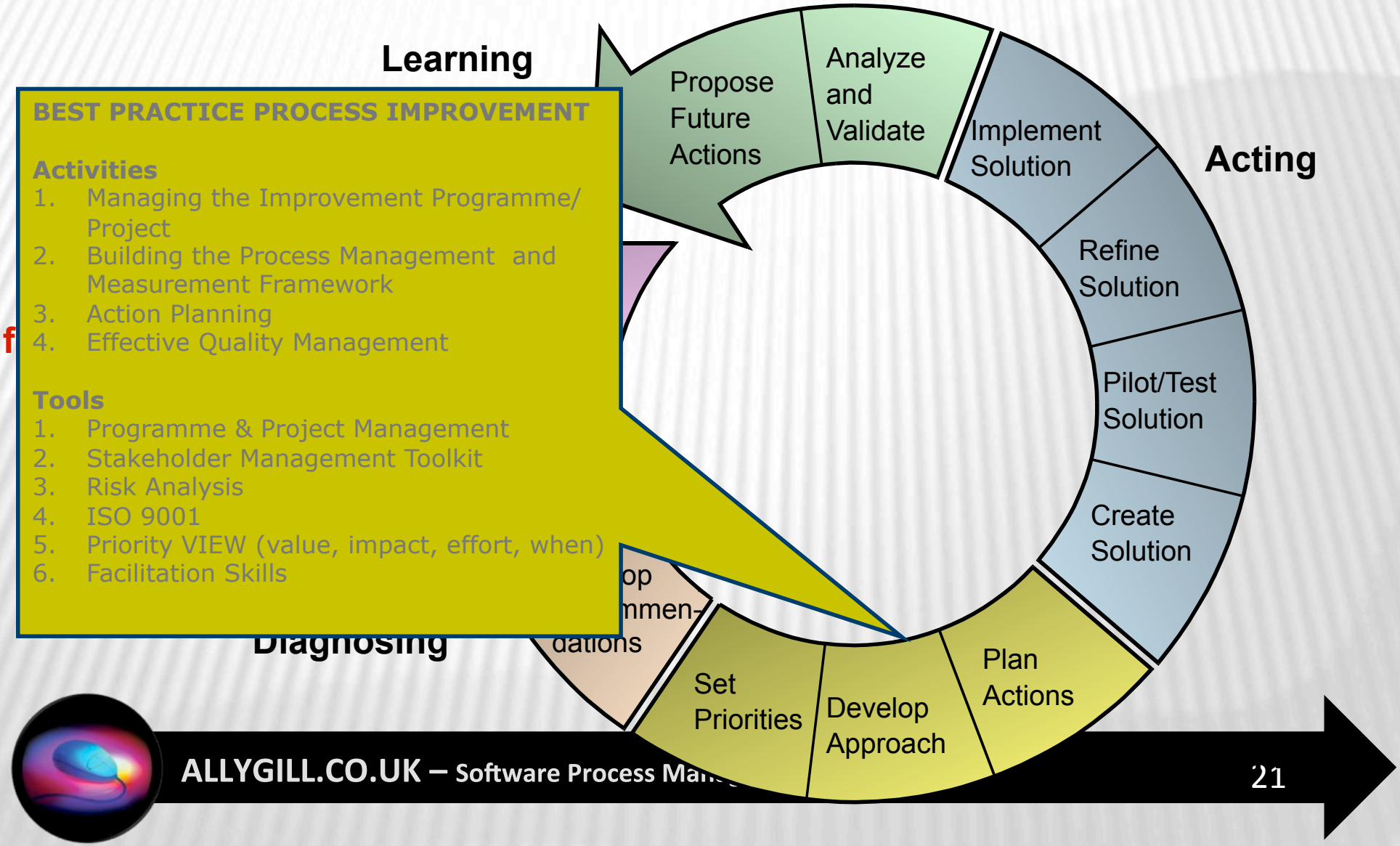

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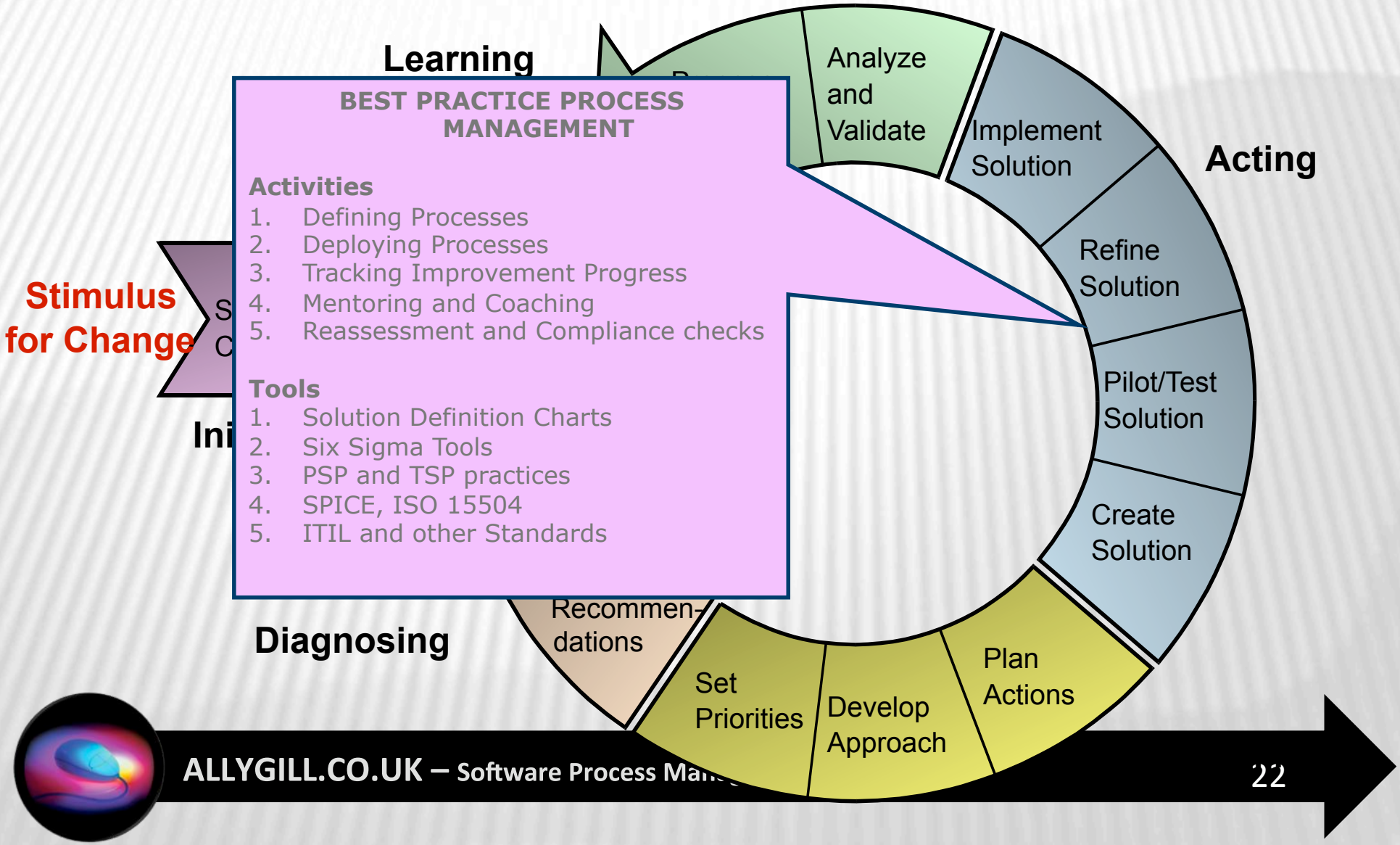

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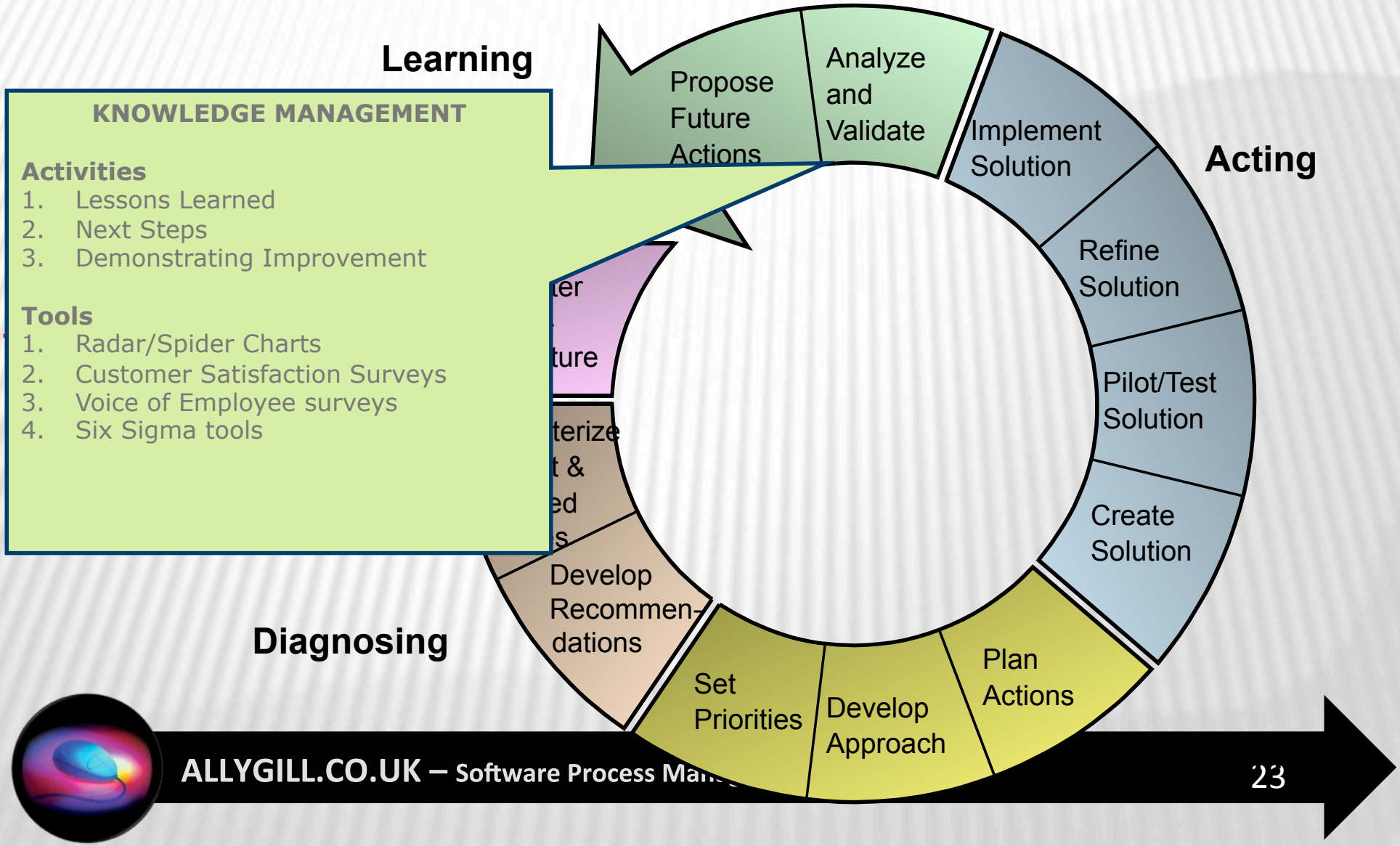

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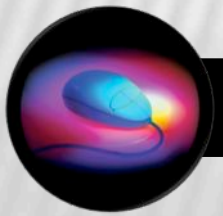
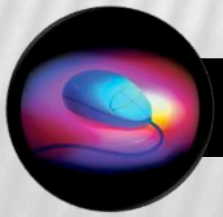
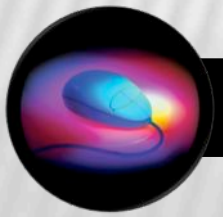


SUMMARY

- CMMI has limitations which we need to recognise and understand
- We need to shift our attentions from process improvement to process management
- Start to build a process management toolkit to help build on the value of CMMI using IT and cross industry disciplines



QUESTIONS



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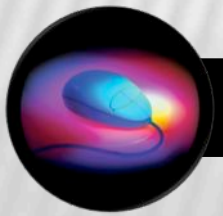

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